The occurrence in the Œdipodinæ of stridulation when at rest seems to have been entirely overlooked in late years, though observed by Yersin in *Œd. fasciata*. Among the Acridinæ *Caloptenus italicus* and *Melanoplus femur-rubrum* have been observed by Yersin and Scudder respectively to perform the stridulatory movements, though no sound was noted in either case. Yersin was disposed to believe that all locusts provided with well-developed wing-covers execute such movements, whether accompanied by sound or not. And it is not unlikely that sound is often produced too faint or fine for our ears to perceive.

Nothing is known of stridulation in the Tettiginæ, but it seems possible that it may occur in the same manner, *i. e.*, by friction of the hind thighs on the side of the pronotal process or anterior edge of the wing which in this group take the place of the wing-covers. In the Eremobinæ *both* sexes are said by Saussure to be often provided with special musical apparatus of two kinds, one used at rest and one in flight and both differing from those here mentioned.

BOTH SIDES OF BUTTERFLIES.

By A. P. MORSE, Wellesley, Mass.

Every collector of butterflies and every student of variation in these insects is interested in methods whereby both surfaces of the wings of his favorites can be studied with a minimum amount of labor and inconvenience. Book-boxes, so-called, with glass top and bottom and cork gummed to the glass, answer very well in a permanent collection, but for one which is receiving additions and to whose owner expense is an item to be closely considered, so that an entire case or cases cannot be given up to a species, some method is necessary which will more readily permit of rearrangement when desired. With this end in view I several years ago designed the following plan, which is here presented in the hope that it will be of interest or use to others. While metal strips filled with cork have been used for some time I believe that the method of rearrangement suggested is entirely novel.

The cases for which the plan was designed are of the standard museum pattern, 16 x 19 x 3 inches outside, 15 x 18 inside measurement, the top and bottom of glass, the sides of wood joined by tongue and groove, the tongue being either of wood or metal. The plan, however, is applicable to almost any form or size of case preferred. Aside from

its increased weight a glass bottom, as well as top, is to be preferred for all cases of considerable size, as it does away with the troublesome shrinking which is inseparable from the use of large sheets of wood unless made in three-ply, as in the manufacture of desks, etc.

The method is this: Procure twice as many thin strips of some straight-grained wood with as little tendency to warp as possible, such as cherry or basswood, one-quarter inch in thickness, as long as the inside measurement of the front of the case and as wide as the case is deep inside. On one side of these strips are sawed, with a fine saw, slots one-fourth inch in depth at intervals of half an inch. Two strips will be needed for each case (front and back), making twice as many strips as cases, one-half of which should have the first slot sawed at a distance of one-half inch from the end, the other half at a distance of three-quarters inch; the reason for this will be seen later. These strips may be procured at slight expense from the maker of the cases or a box manufacturer.

Next, get a reliable tinsmith to cut some strips of tin three-quarters inch wide and fourteen and seven-eighths inches long and bend them up into troughs one-fourth inch wide and deep with vertical sides. To one side of each end of a trough should be soldered neatly the short end of an L-shaped piece of the same material one-fourth plus three-fourths inch long and nearly one-fourth inch wide. These lie flat upon the bottom of the case out of sight beneath the wooden strip and act as feet to hold the trough upright during rearrangement. To give as much supporting surface as possible they should be attached to opposite sides of the trough. The portion of the side of the trough opposite the attached piece should be cut through and turned down flat, widening the supporting base, or it may be removed entirely, leaving the end of the trough with a single vertical edge which fits into the slots sawed in the wooden strips. These edges being on opposite sides of the trough necessitate the different position of the slots on the front and back strips previously mentioned. The troughs are then to be filled with strips of cork and the whole to be painted over a dead white or black as preferred. The tin troughs ready to be filled may be obtained for about three cents apiece, in lots of one hundred or more.

The troughs are held in position by the slots sawed in the wooden strips and may be placed within an inch of each other, or within one-half inch in the case of very small specimens by cutting a little off the ends of the L-shaped feet, or as far apart as desired. The wooden strips are held in place at front and back of the case by short, headless

pins or brads thrust into the sides of the case, and if equal in width to the depth of the case are held down by the cover, or they may be narrower and then held securely in place by a pin above each end.

For examination the case may be placed upon a table covered with white or dark cloth or paper according to the background desired, and may be instantly turned upside down, allowing both sides of the entire series of specimens to be examined when desired without a moment's delay.

A NEW GLOVERIA.

By HARRISON G. DYAR.

Mr. L. O. Howard has sent me several examples of a Lasiocampid collected in Arizona for the Department of Agriculture, which seems to represent an undescribed species. I take pleasure in dedicating it to this well known entomologist.

Dendrolimus howardi, sp. nov.

Female. Like *Quadrina diazoma.* Clay color (Ridgway, pl. V, fig. 8) irrorate with pale chocolate brown scales. Two faint, brown, nearly straight lines, one across the cell, the other at the outer third of the wing, the most distinct mark. A very faint white discal dot. Subterminal line irregular, broken, faint, twice outwardly curved, at veins 3 and 4 and 6 to 8. Secondaries and thorax pale brown, about the tint of the transverse lines of the primaries; abdomen a little paler. Expanse 49 to 66 mm.

Male. Considerably like the male of *D. gargamelle* Strecker (The male of *Q. diazoma* being unknown). Sepia (Ridgway, pl. III, fig. 3), along the outer margin of primaries succeeded by a semi-transparent zone, which shades into raw umber (R. III, 14) over the basal half of the wing, composed of brown and yellowish hairs. Discal dot round, distinct, white. Lines as in the female, faint, darker than the wing, the subterminal especially obscure, broken into a series of brown intervenular dots, the one at the anal angle the most distinct. Secondaries sepia, a semitransparent space covering the outer third except for a narrow outer margin. Body dark, mixed with yellowish hairs. On the primaries the subterminal line is much fainter than in *gargamelle;* the transverse space encroaches on it whereas in *gargamelle* it just reaches the line. Basally in both it reaches to the discal dot. The bright yellowish costal shade is not present in *gargamelle.* The secondaries dark chocolate, not bright reddish brown; the transparent space reaches out further than in its ally, leaving only a narrow band instead of an outer third. Expanse 38 to 45 mm.

The types are three pairs in the National Museum and one pair in my collection. All bred specimens.

In markings the female is perhaps not different from *Quadrina diazoma.*